

## REMARKS/ARGUMENTS

The Office Action was mailed in the present case on September 8, 2003, making a response due on or before December 8, 2003. This response is being submitted, along with a Petition For Extension of Time Within the First Month, and the required extension fee of \$110.00 for a large entity. No additional fee is thought to be due. If any additional fee is due for the continued prosecution of this application, please charge the same to Applicant's Deposit Account No. 50-2555 (Whitaker, Chalk, Swindle & Sawyer, LLP).

Applicant has previously filed a Request For Continued Prosecution in this case. The Examiner has continued the rejection of the remaining claims in the case, basically upon the same art as previously cited with the addition of the Hansen ('680) reference. In the latest rejection, the Examiner rejected Applicant's independent Claims 1 and 12 under 35 U.S.C. §112 on the basis that the newly inserted limitation "non-polymeric" asphaltic base filed to comply with the written description requirement. While Applicant would submit that one skilled in the relevant arts would understand the term to mean an "unmodified" asphalt, i.e., one which does not contain such additions as the acrylic emulsion of Anthenien. However, Applicant has removed the term "non-polymeric" from the remaining independent claims in order to remove this grounds of rejection.

Applicant would submit that the remaining independent claims are patentably distinguishable from even a combination of the previously cited art, first of all on the basis of the features now included in the remaining independent claims, and secondarily based upon the specific Markush "selected from the group consisting of" terminology which is included as a modifier of the "filler" component of each of the remaining independent claims.

Applicant will not restate all of the previous argument with respect to the references which formed the basis of the last office action. To briefly restate the Examiner's argument, George ('573) shows a prior art asphalt roofing structure containing the traditional constituents of an asphaltic base and filler which are applied to a substrate form. However, George fails to teach the advantage of adding

the additional component of hydrated lime, which is basically the point of Applicant's invention. Also, George fails to appreciate the importance of the dolomitic filler.

Anthenien ('895) is then cited to show the addition of hydrated lime to an asphalt composition which can be used in roofing applications. The Examiner also notes that hydrated lime is a known form of an alkaline earth metal hydroxide as discussed in the Background of Applicant's Specification. The Karacsonyi ('410) reference is cited for a teaching of the use of an alkaline earth metal hydroxide and a filler in asphalt roof compositions. The Little ('558) patent and WO ('620) publication are cited to show an asphalt composition containing an alkaline earth metal hydroxide for anti-stripping properties. Finally, the Examiner cites Hansen ('680) to show that the amount of filler can be varied to affect the flow and penetration properties in roofing shingles.

The Hansen ('680) reference appears to be the only new reference cited by the Examiner. Hansen exemplifies the Examiner's use of bits and pieces of a large listing of prior art in an attempt to arrive at each and every feature of Applicant's presently claimed invention. Hansen nowhere suggests that the combination of HL with "dolomitic" filler, in select percentages, produces significant advantages in tear strength (15% less than the control to 15% better than the control, Applicant's Figure 10). In fact, Hansen suggests that any of a large number of commercially available filler materials are acceptable for his purpose. See, e.g., Col. 3, line 11, "Fillers such as talc, calcium carbonate, silicas, fly ash, asbestos, slate dust, wood flour, etc. can also be added..." and also Col. 4, line 2, "Mixtures of different fillers may be used." The importance of a particular type filler, as now claimed by Applicant, will be apparent from the discussion which follows.

With regard to the specific features included in the remaining independent claims which Applicant relies upon for patentability, Applicant is now claiming (1) a specific type of asphalt based product, namely an asphalt roofing structure in which the substrate is selected from the group consisting of roll roofing and shingle substrates; (2) the addition of a particular type of filler selected from various traditional filler materials, namely one "selected from the group consisting of"  $\text{MgCO}_3$  or  $\text{MgCO}_2\text{CaCO}_3$ ; and (3) the addition of hydrated lime in addition to the use of the previously

described traditional filler materials, the filler and hydrated lime components being given in particular percentage ranges in the overall composition.

Applicant has tried to explain in detail in the previous responses the significance of the different types of lime and limestone being recited in the claim language. Briefly stated, limestone is a mineral which is mined commercially and is used in various industries in crushed or powdered form. "Limestone" generally means  $\text{CaCO}_3$ , while "dolomitic limestone" generally refers to the presence of  $\text{MgCO}_3$  or to a mixture of  $\text{MgCO}_3 \cdot \text{CaCO}_3$ . Powdered limestone is converted to quicklime (calcium oxide), by roasting in rotary kilns. Quicklime is slaked with water to form hydrated lime (calcium hydroxide). It is the slaked, hydrated form of lime which is useful for the purposes of the present invention, referred to hereafter as HL.

Applicant has basically made the discovery that the addition of HL dramatically improves the tear strength of roofing shingles as compared to other conventional limestone type "filler" materials. More specifically, however, Applicant's remaining independent Claims 1 and 12 claim the use HL in select percentages in combination with a particular type of more traditional filler, namely "dolomitic limestone." Thus, in the amended claim language, Applicant is claiming the specific combination of a particular type of filler (dolomite) with a particular form of lime (hydrated lime), in select percentage.

Applicant has limited the definition of the traditional filler utilized to the above specific parameters by the particular use of the Markush conjunctive language "selected from the group consisting of" with respect to the description of the traditional filler chosen. The Examiner will appreciate that the Markush expression creates a generic word for a specified group of two types of limestone where no generic term exists. Applicant's amended claims describe the filler as :

*"a dolomitic limestone filler selected from the group consisting of  $\text{MgCO}_3$  or  $\text{MgCO}_3 \cdot \text{CaCO}_3$ , the dolomitic limestone filler being present in the range between 45-*

*55% by weight of the asphalt composition and the asphaltic base being present in the range between 30% to 60% by weight of the asphalt composition " (Claim 1)*

The particular Markush terminology selected to describe the "dolomitic limestone filler" limits the class to the specified species of  $MgCO_3$  or  $MgCO_2 \cdot CaCO_3$ . This language is intended to emphasize the unique advantages of the invention which are realized when a "dolomitic filler" is utilized in combination with the HL constituent in the percentages claimed.

Applicant's use of the more open termed "consisting essentially of" language with respect to the overall composition in Claim 12 was merely intended to better distinguish the "polymerically" modified asphalts, such as Anthenien and Hansen. As such, Applicant wishes to retain the "consisting essentially of" language in Claim 12. In this regard, Applicant would submit that the addition of a major amount of a chemically active polymeric ingredient, e.g., 25 pounds of acrylic emulsion, along with the 12 1/2 pounds of hydrated lime added to a 200 pound asphalt emulsion (Anthenien, Example, Col.2, line1 et seq.), would of necessity "materially affect" the basic characteristics of the asphalt composition under consideration. In fact, the point of Anthenien was to make the asphalt composition workable at ambient temperatures. The emphasis of the patent is to produce a polymer modified asphalt so that the asphalt does not have to be heated to make it flowable. The basic properties of the composition are being materially affected to make it flowable at room temperature.

None of the prior art cited recognizes that the combination of a dolomitic filler with HL in the percentages recited will greatly improve the tear strength of a roofing shingle. Applicant's theory of the working of the invention is that the addition of hydrated lime, in select percentages, to a dolomitic limestone filler in the asphaltic base composition of asphalt roofing structures produces a greatly improved bond between the aggregate/filler, fiber glass mat or other substrate form, and asphalt, especially in the presence of water which has a stronger affinity for the aggregate than does the asphalt. The result of this chemical interaction is improved tear strength and durability in the shingle or roll roofing material. The greatly improved results achieved by using Applicant's formulation is illustrated graphically in Figure 10 of the drawings as originally filed.

Applicant therefore uses an additional ingredient to traditional limestone type fillers in asphalt compositions which are applied to suitable substrates to form asphalt roofing structures. However, it is also important to note that Applicant does not leave out or eliminate the filler component. In fact, Applicant now recites the traditional filler material more restrictively in terms of the Markush terminology. This distinction is considered important in that certain of the prior art references may have used limestone filler or hydrated lime alternatively, but not both together. Also, nothing in the prior art suggests an advantage of using a particular filler, namely dolomitic limestone, with HL in a roofing shingle composition. Applicant's HL component is used in a specific range (1-10%, preferably 3-5% by weight of asphalt) and performs a function which differs from traditional "limestone" and other types of "filler" materials.

Not even a combination of the teaching of the cited references suggests Applicant's claimed compositions which include the additional ingredient of a "hydrated lime" component to a traditional asphalt roofing composition also containing a "dolomitic limestone" filler, in select percentages, in order to increase the tear strength and durability of such compositions (as shown by the examples and data in Applicant's Specification).

For all of the above reasons, Applicant respectfully traverses the Examiner's rejections and asks for the Examiner's reconsideration of the remaining amended claims.

Accordingly, Claims 1, 4, 8-10 and 12 are thought to be allowable over the art of record and an early notification of the same would be appreciated.

Respectfully submitted,

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